

What is claimed:

1. A rail car door closer, comprising:
a movable base having a rotatable member rotationally disposed thereon, said movable base being coupled with a drive system configured to translate the movable base along one of a rail and a track disposed adjacent a railroad rail; and
a means for securing said rotatable member in a substantially upright position,
wherein, in said substantially upright position, said rotatable member is positioned vertically to contact an open rail car door, and
wherein, upon movement of said movable base to a position adjacent and beneath said open rail car door, said rotatable member contacts said open rail car door and subsequently moves said open rail car door in correspondence with a movement of said movable base.
2. A rail car door closer according to claim 1, further comprising an actuating device adapted to rotate said rotatable member between a raised position and a lowered position.
3. A rail car door closer according to claim 2, wherein said actuating device is disposed on said movable base.
4. A rail car door closer according to claim 1, wherein said means for securing said rotatable member in a substantially upright position comprises at least one of a lock, a latch, a pin, and an actuator.
5. A rail car door closer according to claim 4, wherein said drive system comprises a motor configured to drive at least one of a chain and a cable in a continuous

loop in both a forward and a backward direction along a respective one of said rail and said track, said movable base being coupled to a respective one of said chain and cable.

6. A rail car door closer according to claim 5, wherein said drive system comprises at least one motor mounted adjacent said rail outside of a range of travel of said rail car door closer movable base along said rail, said at least one motor being configured to drive a drive member selected from the group consisting of a chain, a cable, and a belt, in both a forward and a backward direction along a respective one of said rail and said track, said movable base being coupled to said at least one drive member.

7. A rail car door closer according to claim 6, wherein said drive system comprises a plurality of motors, each of said motors being configured to drive at least one drive member selected from the group consisting of a chain, a cable, and a belt, in both a forward and a backward direction along a respective one of said rail and said track, said movable base being coupled to each of said respective drive member.

8. A rail car door closer according to any one of claims 1 or 4-7, further comprising:

a torque bar connected to said rotatable member;

an actuating device connected to said torque bar to selectively apply a torque to a torque bar;

wherein transmission of torque from said torque bar to said rotatable member rotates said rotatable member in a direction of an applied torque.

9. A rail car door closer according to claim 8, wherein said actuating device comprises one of a hydraulic, pneumatic, and electro-magnetic actuator.

10. A rail car door closer according to claim 9, wherein said actuating device a torque bar rotatably disposed adjacent said rail along a range of travel of said rail car door closer, and wherein said actuating device is mounted adjacent said rail outside of a range of travel of said rail car door closer movable base along said rail.

11. A rail car door closer according to claim 10, wherein said rotatable member comprises a through-hole in a base portion thereof, said through-hole defining an opening having a cross-section substantially corresponding in size and shape to a cross-section of said torque bar along at least a portion of said through-hole, and wherein said torque bar is enabled to slide within said through-hole and said opening.

12. A rail car door closer according to claim 10, wherein both said opening and said torque bar are rectangular in cross-section.

13. A rail car door closer according to claim 10, wherein said opening comprises at least a bottom surface having a static coefficient of friction relative to steel below 0.20.

14. A rail car door closer according to any one of claims 1 or 4-7, further comprising:

an actuating device mounted at a proximal end to said rail car door closer movable base and attached at a distal end to a lateral surface of said rotatable member, said actuating device being configured to drive said distal end between a first position and a second position,

wherein movement of said distal end of said actuating device selectively applies a torque to said rotatable member and rotates said rotatable member in a direction of an applied torque.

15. A rail car door closer according to claim 13, wherein said actuating device comprises one of a hydraulic, pneumatic, and electro-magnetic actuator.

16. A rail car door closer, comprising:

a movable base having a rotatable member rotationally disposed thereon, said movable base being coupled with a drive system configured to translate the movable base along one of a rail and a track disposed adjacent a railroad rail; and

an actuating device adapted to rotate said rotatable member between a raised position and a lowered position;

wherein, in said substantially upright position, said rotatable member is positioned vertically to contact an open rail car door, and

wherein, upon movement of said movable base to a position adjacent and beneath said open rail car door, said rotatable member contacts said open rail car door and subsequently moves said open rail car door in correspondence with a movement of said movable base.

17. A rail car door closer according to claim 16, wherein said drive system comprises a motor mounted adjacent said rail outside of a range of travel of said rail car door closer movable base along said rail, and wherein said motor is connected to a drive member selected from the group consisting of a chain, a cable, and a belt, by a connection member attached to an output shaft of said motor to drive said drive member in one of a forward and a backward direction in accord with a direction of rotation of said motor output shaft along a respective one of said rail and said track, said movable base being coupled to said at least one drive member.

18. A rail car door closer according to any one of claims 17, further comprising:

a torque bar rotatably disposed adjacent said rail along a range of travel of said rail car door closer, said torque bar being connected to said rotatable member; and

an actuating device comprising one of a hydraulic, pneumatic, and electro-magnetic actuator, mounted adjacent said rail outside of a range of travel of said rail car door closer movable base along said rail and connected to said torque bar to selectively apply a torque to a torque bar,

wherein transmission of torque from said torque bar to said rotatable member rotates said rotatable member in a direction of an applied torque.

19. A rail car door closer according to claim 18, wherein said rotatable member comprises a through-hole in a base portion thereof, said through-hole defining an opening having a cross-section substantially corresponding in size and shape to a cross-section of said torque bar along at least a portion of said through-hole, and wherein said torque bar is enabled to slide within said through-hole and said opening.

20. A rail car door closer according to claim 17, wherein a plurality of said movable bases having a rotatable member rotationally disposed thereon are disposed to translate along said rail.

21. A method of closing an open rail car door of a rail car disposed on a railroad track, comprising the steps of:

positioning a movable rail car door closing assembly comprising a rotating member along a rail disposed adjacent said railroad track and adjacent a first open rail car door;

rotating said rotating member upwardly to confront said first open rail car door; and

moving said movable rail car door closing assembly along said rail to force said rotating member in a closing direction of said first open rail car door and to contact and close said first open rail car door.

22. A method of closing an open rail car door of a rail car disposed on a railroad track according to claim 21, further comprising the steps of:

rotating said rotating member downwardly away from the closed rail car door to permit said movable member to be translated along said rail without interference,

repositioning said movable rail car door closing assembly along said rail adjacent a second open rail car door;

rotating said rotating member upwardly to confront said second open rail car door;
and

moving said movable rail car door closing assembly along said rail to force said rotating member in a closing direction of said second open rail car door and to contact and close said second open rail car door.

23. A method of closing an open rail car door of a rail car disposed on a railroad track according to claim 21, further comprising the steps of:

positioning a second movable rail car door closing assembly comprising a rotating member along said rail adjacent a second open rail car door comprising a latch, said second open rail car door being disposed adjacent to and opening toward said first open rail car door;

rotating said rotating member upwardly to confront said second open rail car door;

moving said second movable rail car door closing assembly along said rail to force

said rotating member thereof in a closing direction of said second open rail car door and to contact and move said second open rail car door in a closing direction;

holding said second open rail car door in a substantially closed position; and

moving said movable rail car door closing assembly along said rail to force said rotating member thereof in a closing direction of said first open rail car door and to contact and move said first open rail car door in a closing direction to a substantially closed position, whereupon said second open rail car door latches to said first open rail car door.